GODIK, Yu.S.; TSUBIN, M.S.

The Sh2PA and Sh2PA-2 -type automatic box parts and tenon-cutting machines. Biul. tekh. ekon. inform. no.9:44-46 '59.
(MIRA 13:3)

(Woodworking machinery)

GODIK, Yu.S.

The ShD-15-type tenon-cutting and frame machine. Biul. tekh.-ekon. inform. no.10:30-32 '59. (MIRA 13:3)
(Woodworking machinery)

GODIK, Yu.S.

Drill-head set for woodworking. Biul.tekh.-ekon.inform. no.1:32-36 '60. (MIRA 13:5)
(Woodworking machinery)

GODIK, Yu.S.

The TSMShch multiple-saw machine unit. Biul.tekh.-ekon. inform. no.3:28-29 '60. (MIRA 13:6)
(Sawmills)

GODIK, Yu.S.

Power-head units for woodworking. Biul.tekh.-ekon.inform. no.6: 30-33 '60. (MIRA 13:8)
(Woodworking machinery)

GODIK, Yu.S.

Power-head units for woodworking. Biul.tekh.-ekon.inform. no.4: 28-32 '60. (MIRA 13:11)
(Woodworking machinery--Attachments)

GODIK, Yu.S.

New woodworking machinery. Der.prom. 9 no.3:15-16 Mr '60. (MIRA 13:6)
(Woodworking machinery)

GODIK, Yu.S.

New power heads for machine units. Der.prom. 9 no.7:15-16 Jl '60. (MIRA 13:7)

1. Moskovskiy zavod derevoobrabatyvayushchikh stankov.
(Woodworking machinery)

GODIK, Yu.S.

New unitized power heads. Der.prom. 9 no.8:15-16 Ag '60.
(MIRA 13:8)

1. Moskovskiy zavod derevoobrabatyvayushchikh stankov.
(Woodworking machinery)

GODIK, Yu.S.; GUDZON, N.I.

The DS-6 and DS-7 woodworking machines. Biul.tekh.-ekon.inform. no.11:28-31 '60. (MIRA 13:11)
(Planing machines)

YUR'YEV, Yu.K.; ROZANTSEV, E.G.; GODIKOVA, S.N.

Synthesis of 2,5-dimethyl-3-alkylfuranidines. Zhur. ob. khim. 28 no. 8:2168-2171 Ag '58. (MIRA 11:10)

1. Moskovskiy gosudarstvennyy universitet.
(Furan)

BURDASTYKH, Yegor, tekhnolog (g.Orel); MAKAROV, V. (g.Arzamas); KARPUSHCHENKO, V. (Leningrad); SHTENNIKOV, F., personal'nyy pensioner (g.Gor'kiy); GODILO, A., kontrol'nyy master (g.Cherkessk); VOLKOV, P., inzh.-tekhnolog (g.Cherkessk); BURLAK, M. (g.Makeyevka); BELYAYEVSKIY, V., inzh. po izobretatel'stvu i ratsionalizatsii (g. Kirovakan); TYURIKOV, A. (g.Omsk)

This is the way we live. Izobr.i rats. no.1:11 '64.

(MIRA 17:4)

1. Zavod imeni Medvedeva (for Burtdastykh). 2. Chlen Soyuza zhurnalistov SSSR (for Godilo). 3. Cherkesskiy zavod kholodil'nogo oborudovaniya, Cherkessk (for Godilo, Volkov). 4. Chlen redkollegii mnogotirazhki makeyevskogo metallurgicheskogo zavoda "Kirovets", g. Makeyevka (for Burlak). 5. Rukovoditel' Omskogo obshchestvennogo konstruktorskogo byuro zheleznodorozhnikov (for Tyurikov).

BRUK, A.S., kandidat tekhnicheskikh nauk; GODILO, P.V., inzhener.

New xylenol resin used for treatment of wood fiber floor slabs.
Biul. stroi.tekh. 13 no.12:15-16 D '56. (MLRA 10:2)

1. Nauchno-issledovatel'skiy institut-200. Glavstandartdom.
(Hardboard) (Resins, Synthetic)

GUBENKO, A.B.; GODLIN, F.V.; PANFEROV, I.V.; TYUZNEV, V.P.

Use of wood fiber blocks in three-layer glued elements. Strol. mat 7 no.9:37-39 S '61. (MIRA 14:11)
(Wallboard)

GODILO, P.V., inzh.; ROGOVESHKO, N.V., inzh.; ROMANENKOV, I.G., kand.tekhn. nauk

Technology of production and study of large block foam plastics for the middle layer of panels. Trudy TSNIISK no.24:276-322 '63. (MIRA 17:1)

BELOZEROVA, Anastasiya Sergeyevna; VETRYUK, Ivan Martynovich; GODILO, Petr Viktorovich; ZUBAREV, Georgiy Nikolayevich; KOVAL'CHUK, Leonid Mikhaylovich; KSYUNINA, Nina Grigor'yevna; NIKIFOROV, Yuriy Nikolayevich; PARINI, Yevgeniy Pavlovich; PATUROYEV, Vasiliy Vasil'yevich; PETROV, Igor' Stepanovich; CHERNYY, Boris Grigor'yevich; GUBENKO, A.B., doktor tekhn. nauk, red.; SAKHAROV, M.D., red.; MAKSAKOVA, A.M., red.izd-va; GRECHISHCHEVA, V.I., tekhn. red.

[Glued wooden elements and techniques for their manufacture] Kleenye dereviannye konstruktsii i tekhnologiia ikh izgotovleniia. [By] A.S.Belozerova. i dr. Moskva, Goslesbumizdat, 1962. 180 p. (MIRA 16:5)

(Gluing)

GOLUB, P.V.; ROMANENKOV, I.G.

Determination of the overpressure developed by foam polystyrene during molding. Plast. massy no.4:34-36 '65.

(MIRA 18:6)

ANIKUSHIN, V.; RUBINSHTEYN, S.; GUBENKO, A., doktor tekhn.nauk; KOVAL'CHUK, L., kand.tekhn.nauk; GODILO, P., inzh.

Rapid gluing of wood. Na stroi.Ros. 3 no.9:29-31 S '62.
(MIRA 15:12)

1. Direktor Domostroitel'nogo fanernogo kombinata No.3 Glavnogo upravleniya promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley (for Anikushin). 2. Glavnyy inzh. Domostroitel'nogo fanernogo kombinata No.3 Glavnogo upravleniya promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley (for Rubinshteyn). 3. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy Akademii stroitel'stva i arkhitektury SSSR (for Godilo).

(Gluing)

VALUYKO, G.G.; GODIN, K.G.; POZNANSKAYA, M.N.

Systems of the thermal processing of grapes. Trudy VNIIViV "Magarach" 13:44-56 '64. (MIRA 17:12)

GODIN, L.

[redacted]asters of the soil. IUn. nat. no.9:1-3 S '57. (MLRA 10:9)

1. Starotoydenskaya srednyaya shkola No.31, Voronezhskaya oblast'.
(Agriculture--Study and teaching)

GODIN, I.

In Pavlik Morozov's group. IUn.nat. no.7:1-2 Jl '59.
(MIRA 12:9)

(Rabbits)

GODIN, L. (g.Skopin)

Skopin potters. Mest.prom.i khud.promys. 3 no.2:35 F '62.
(MIRA 15:2)

(Skopin--Ceramics)

L 57520-65 EWT(d)/EWT(m)/EWA(d)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(n)
Pf-4 IJP(c) JD/HW

ACCESSION NR: AR5013010 UR/0137/65/000/004/D011/D011
621.771.001

SOURCE: Ref. zh. Metallurgiya, Abs. 4D74

AUTHOR: Skryabin, N. P.; Bazhanov, Yu. M.; Kazakov, K. A.; Godin, N. I.; Kochetov, I. M.

TITLE: Testing of sizing rolls for rolling light section stock from titanium alloys

CITED SOURCE: Tr. Ural'skogo n.-i. in-ta chern. met., v. 3, 1964, 143-148

TOPIC TAGS: titanium alloy, rolling mill, metal rolling

TRANSLATION: Investigations were conducted to determine the optimum conditions for rolling titanium alloys on the 260 light section mill. It was found that the grooves in rolls for rolling titanium alloys should be designed in such a way that the gripping angle does not exceed 0.30-0.32 radians (17-18°). Under these conditions stable gripping of the rolled stock by the rolls is ensured. During rolling it is necessary to check the setting of the mill carefully. Rolling should be done on the oval-oval system to improve the quality of the surface during sizing. It is

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necessary to have feeding and extracting equipment to improve the operation of the roll system, provide satisfactory conditions for feeding the strip into the rolls, and also to prevent jamming of the strip in the guides. M. Yudina.

SUB CODE: IE ENCL: 00

Card 2/2

TSONEV, K.; GODIN, V.

On functional conditions of the thyroid gland in some collagen diseases. Folia med. (Plovdiv) 6 no.4:245-252 '64

1. Vysshiy meditsinskiy institut imeni I.P.Pavlova, g. Plovdiv, Bolgariya; kafedra fakul'tetskoy terapii (Rukovoditel': prof. B. Yurkov); Institut revmatizma AMN SSSR g. Moskva (Direktor: deystvitel'nyy chlen AMN SSSR prof. A.I. Nesterov).

GODIN, V.P., GORSHKOV, S.I.

Method for determining the time of reflex reactions. Fiziol.zhur. 44 no.5:496-497 My '58 (MIRA 11:6)

1. Otdel radiobiologii Instituta im. F.F. Erismana, Moskva.
(REFLEX,
determ. of time of reflex reaction (Rus))

GODIN, V. P.

Cand Med Sci - (diss) "Dynamics of the hidden period of the unconditioned-reflex reaction under the influence of small doses of external radiation." Moscow, 1961. 15 pp; (Academy of Medical Sciences USSR); 320 copies; free; (KL, 5-61 sup, 202)

GODIN, V.P.

Change in the time of the reflex reaction during the action of small doses of internal irradiation. Fiziol.zhur. 47 no.2:230-236 F '61. (MIRA 14:5)

1. From the Laboratory of the Academy of A.D.Speransky, U.S.S.R. Academy of Sciences and the Laboratory of Radiobiology of the Erisman Research Institute of Hygiene, Moscow.
(REFLEXES) (SODIUM—ISOTOPES)

MEYERSON, F.Z.; REPIN, Yu.M.; GODIN, V.P.

Role of correlation between the physiological function and genetic apparatus of the cell in the appearance and involution of myocardiac hypertrophy. Dokl. AN SSSR 152 no.6:1483-1486 O '63. (MIRA 16:11)

1. Institut normal'noy i patologicheskoy fiziologii AMN SSSR. Predstavleno akademikom A.N. Bakulevym.

PSHENNIKOVA, M.G.; GODIN, V.P.

Change in the sodium balance in rats subjected to experimental heart failure. Dokl. AN SSSR 154 no.2: 480-483 Ja'64. (MIRA 17:2)

1. Institut normal'noy i patologicheskoy fiziologii AMN SSSR. Predstavleno akademikom A.N. Bakulevym.

GORSHKOV, Sergey Il'ich; ANTROPOV, Gennadiy Andreyevich; GORBUNOV, Oleg Nikolayevich; GODIN, V.P., red.; LANDAU-TYLKINA, S.P., red.

[Biological action of ultrasound] Biologicheskoe deistvie ul'trazvuka. Moskva, Meditsina, 1965. 196 p. (MIRA 18:12)

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S/020/60/135/005/024/043
B019/B067

AUTHORS: Godin, Yu. A., Academician of the AS Turkmenskaya SSR, Yegorkin, A. V.

TITLE: Structure of the Earth's Crust According to Data of Regional Seismic Studies on the Southeast Russian Platform

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 5, pp. 1123-1126

TEXT: The authors present results of an interpretation of wave hodographs which were taken at a distance between explosion and instrument larger than the critical one. The studies were made by the Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov (All-Union Scientific Research Institute of Geophysical Methods) from 1956-1959. The existence of wave groups having similar properties is regarded as the characteristic property of the seismograms obtained. On the basis of a detailed study of these wave groups and a comparison with results obtained by other authors, the authors make the following suggestion concerning the structure of the Earth's crust in this region which consists of layers with different

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Structure of the Earth's Crust According to Data of Regional Seismic Studies on the Southeast Russian Platform

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propagation velocities of seismic waves: The upper part of the Earth's crust has a mean velocity of 6.0 km/sec and a thickness of 12-13 km. A thin surface layer of this layer (1-3 km thick) has a velocity of 6.6 km/sec. The mean velocity down to a depth of 20 km (Mokhorovichich surface) is 7.1 km/sec below which, at a depth of 31-33 km, a thin plate (1-3 km) has a velocity of 7.6 km/sec. Below this plate is a 10 km thick layer with a velocity of 8.15 km/sec. A surface along which the head waves propagate at a velocity of 9.15 km/sec possibly constitutes the surface of a thin layer. The vertical velocity gradients of the individual plates may be negative or positive. Furthermore, the Earth's crust is assumed to consist of three main layers: 1) sedimentary layer, 2) "granite" layer, 3) "basalt" layer. These layers are traversed by intermediate layers. S. V. Chibisov, A. V. Yegorkin, Ye. D. Tagay, I. V. Pomerantsev, and M. V. Margot'yeva are mentioned. There are 2 figures and 7 references: 4 Soviet and 2 US.

SUBMITTED: May 18, 1960

Card 2/2

AUTHOR: EMEL'JANOV,V.S., GODIN,YU.G., EVSTJUCHIN,A.I. PA - 2051
TITLE: Investigation of the Zirconium-Tantalum.System.
PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 1, pp 42-47 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 3 / 1957

ABSTRACT: This system was investigated by methods of metallography, thermal analysis, electric resistance, hardness, and the X-ray-phase analysis, and the state diagram was constructed. The difficulties in producing zirconium-tantalum alloys were adjusted by smelting the corresponding samples in the electric arc oven MIFI-SM-3 with a coolable copper crucible. The samples were smelted in a pure argon atmosphere. The production of the samples from primary materials is described. The cast samples were homogenized by annealing at 1200°, then ground and dry-polished. Samples of non-annealed powder (which was taken from cast- and chilled alloys of different composition) were subjected to an X-ray phase analysis. The thermograms were recorded only up to 1000° by means of the recording KURNAKOV pyrometer. Determination of the solidus- and liquidus lines is then discussed.
Results of the investigation: The investigation of the microscopic structure of the cast samples proved the existence of a considerable domain of solid solutions of tantalum in zirconium, as well as of an eutecticum and of a domain of solid solutions

Card 1/2

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GODIN, YU. G. and YEVSTYUKHIN, A. I.

A study of the phase diagram of the system $KF-ThF_4$ over the concentration range 35 to 100 mole % ThF_4. Report of the MIFI, 1952 (unpublished).

SO: J. Nuclear Energy, II, 1957, Vol. 5, p. 114, Pergamon Press Ltd., London

GODIN, Yu. G.: Master Tech Sci (diss) -- "Investigation of the structure and properties of alloys of the zirconium area of the zirconium-tantalum-columbium system". Moscow, 1958. 15 pp (Min Higher Educ USSR, Moscow Engineering-Physics Inst), 100 copies (KL, No 7, 1959, 124)

GODIN, Yu G.

"Binary and Ternary Alloys of Zirconium with Tantalum and Niobium", by

V. S. Yemelyanov, Y. G. Godin, and A. I. Yevstyukhin.

Report Presented at 2nd UN Atoms-for Peace Conference, Geneva, 9-13 Sept 1958

AUTHORS: Yemel'yanov, V. S., Godin, Yu. G., Yevstyukhin, A. I. 89-2-8/35

TITLE: Study of the Zirconium Area of the Phase Diagram of Zr-Ta-Nb.

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 2, pp. 161-170 (USSR).

ABSTRACT: A study was made of the zirconium area of the ternary diagram Zr-Ta-Nb with phase field boundaries corresponding to 82% of Zr and a temperature of 1200°C, and of the system Zr-Nb. The study was carried out by the methods of metallographic, thermal and X-ray diffraction analysis. Five polythermal cross-sections passing through the apex of the zone were selected for the construction of the Zr area of the phase diagram; the cross sections had the ratio of

$$\frac{\%Nb}{\%Ta} = 0.2;\ 0.5;\ 1.0;\ 2.0;\ 5.0.$$

The following phase areas were established; a) two single-phase areas α and β ; b) three two-phase areas $\alpha+\beta$, $\beta+\gamma$, and $\alpha+\gamma$; c) one three-phase area $\alpha+\beta+\gamma$.
The solubility of Ta and Nb in α-Zr in the system Zr-Ta-Nb is approximately 0.5%. Shifting of the phase areas $\alpha+\beta$ and $\beta+\gamma$ from Zr-Ta to Zr-Nb (to lower temperatures and higher Nb-contents) was observed. The boundaries of the phase areas $\alpha+\gamma$ and $\alpha+\beta$

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89-2-8/35

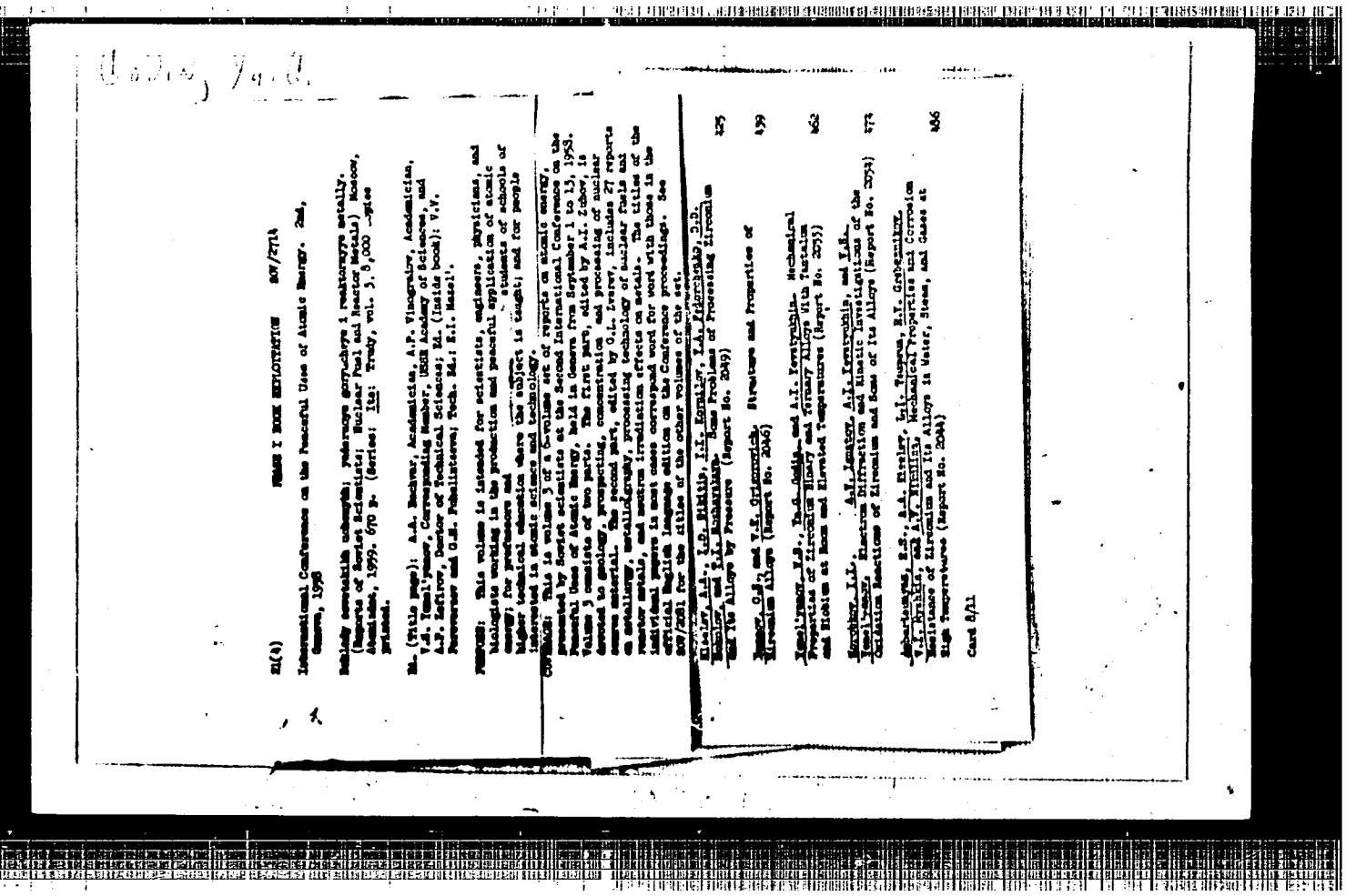
Study of the Zirconium Area of the Phase Diagram of Zr-Ta-Nb.

are lowered from 790°C for Zr-Ta to 612°C for Zr-Nb. A binary eutectoid line which passes between the areas $\alpha+\beta$ and $\beta+\gamma$ shifts from Zr-Ta to Zr-Nb, i.e. to higher Nb-contents and lower temperatures. The solubility of Nb in α-Zr in the system Zr-Nb is approximately 0.5 wt.%. Eutectoid disintegration in the system Zr-Nb takes place at 612 $\pm$ 13°C. Addition of Nb to alloys in the system Zr-Ta shifts the maximum of martensinic transformation to the left and increases the stability of β-phase in annealed alloys at room temperatures.

SUBMITTED: April 10, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Zirconium-X-ray diffraction analysis 2. Niobium 3. Tantalum 4. X-ray diffraction analysis-Applications



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A004/A101

18.1272

AUTHORS: Yemel'yanov, V. S., Godin, Yu. G., Yevstyukhin, A. I.

TITLE: Mechanical properties of binary and ternary zirconium alloys with tantalum and niobium at room and high temperatures

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 20, 1961, 16, abstract 20A118 (V sb. "Metallurgiya i metalloved. chist. metallov", no. 1, Moscow, 1959, 128-143)

TEXT: The authors investigated the hardness and strength of cast and hardened Zr-alloys with Ta (0 - 100%) and Nb (0 - 20%) and also ternary alloys containing up to 18% Ta and Nb. The hardness (HR) was measured in an argon atmosphere. It was found that a maximum appeared on the composition - hardness and composition - strength curves which can be explained by the transformation of the β-phase into the α-phase. Alloying zirconium with Ta and Nb increases the strength and hardness at room and high temperatures. Up to 10% Nb strengthens Zr to a greater degree than the addition of Ta.

[Abstracter's note: Complete translation]

Card 1/1

YEMEL'YANOV, V.S.; YEVSTYUKHIN, A.I.; GODIN, Yu.G.; KUSAKOV, A.A.

[Constitutional diagram of the system zirconium - beryllium] Diagramma sostoianiia sistemy tsirkonii-berillii. Moskva, Glav. upr. po ispol'zovaniiu atomnoi energii, 1960. 14 p. (MIRA 17:1)
(Zirconium-beryllium alloys--Metallography)
(Phase rule and equilibrium)

18.1215
18.9200

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S/081/61/000/016/012/040
B118/B101

AUTHORS: Yemel'yanov, V. S., Godin, Yu. G., Yevstyukhin, A. I.

TITLE: Preliminary investigation of the melts of the system zirconium - aluminum - beryllium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 16, 1961, 53, abstract 166365 (Sb. "Metallurgiya i metallovedeniye chistykh metallov". M., Atomizdat, no. 2, 1960, 58 - 77)

TEXT: Six sections of the system Zr - Al - Be were examined by the methods of thermal, metallographic, and X-ray analysis, and also by determination of the hardness. The samples were obtained by fusion in an arc furnace with a wear-resistant W electrode and a water-cooled copper crucible. Six hypothetical constitution diagrams were plotted on the basis of the data obtained. Three ternary compounds formed by peritectic reactions were found in the system $ZrBe_9$ - Zr_4Al_3: $4ZrBe_9 \cdot Zr_4Al_3$ (1380°C), $ZrBe_9 \cdot Zr_4Al_3$ (1330°C), and $ZrBe_9 \cdot 9Zr_4Al$ (1270°C). Zr_4Al_3 is soluble in $ZrBe_9$. The system $ZrBe_9$ - $ZrAl_2$ gives a diagram of the eutectic type

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Preliminary investigation of the...

(the eutectic $L \rightleftarrows ZrBe_9 + ZrBe_9 \cdot 9ZrAl_2$ at 1445°C and ~75% $ZrAl_2$). $ZrBe_9 \cdot 9ZrAl_2$ is formed by a peritectic reaction at 1465°C. Three ternary compounds were also found in the system $ZrBe_2$ - $ZrAl_2$: $ZrBe_2 \cdot 3ZrAl_2$ which is formed by a peritectic reaction (1415°C), $3ZrBe_2 \cdot ZrAl_2$ formed by a peritectic reaction (1340°C), and $4ZrBe_2 \cdot ZrAl_2$ formed by the peritectoid conversion $ZrBe_2 + 3ZrBe_2 \cdot ZrAl_2$ (1100°C). $ZrAl_2$ is soluble in $ZrBe_2$, and $ZrBe_2$ in $ZrAl_2$. Two intermediate phases are formed in the system $ZrBe_{13}$ - $ZrAl_3$ due to peritectic reactions: $2ZrBe_{13} \cdot ZrAl_3 \rightleftarrows L + ZrBe_{13} \cdot 13ZrAl_3$ (1190°C) and $ZrBe_{13} \cdot 13ZrAl_3 \rightleftarrows L + ZrAl_3$ (1250°C). $ZrAl_3$ is soluble in $ZrBe_{13}$. The system $ZrBe_{13}$ - Al gives a diagram of the eutectic type (eutectic at 635°C) with a limited solubility of Al in $ZrBe_{13}$. Three compounds formed by peritectic reactions were found in the system $ZrAl_3$ - Be: $ZrBeAl_3$, $ZrBe_7Al_3$, $ZrBe_{19}Al_3$, and the easily fusible eutectic $ZrAl_3Be_{19} + ZrAl_3Be_7$ (~35% Be and 635°C). [Abstracter's note:

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Preliminary investigation of the...

Complete translation.

Card 3/3

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B014/B070

18.9200

AUTHORS: Yemel'yanov, V. S., Godin, Yu. G., Yevstyukhin, A. I., Rusakov, A. A.

TITLE: State Diagram of the Zirconium - Beryllium System

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 1, pp. 33-38

TEXT: As starting material for different alloys, zirconium iodide (purity 99.7% by weight) and distilled beryllium (purity 99.4% by weight) were used. The cast and annealed samples were investigated metallographically. The annealing temperature lay between 750°C and 1200°C and the annealing time between 250 and 35 hours. The samples were analyzed thermally in vacuum at a heating or cooling rate of 5 - 7°C per minute. For alloys containing 2.9, 5.04, and 8.9 per cent by weight of beryllium, critical points were determined. X-ray analyses (quantitative phase analysis) were made by photographic as well as ionization methods. The apparatus РКУ-86 (RKU-86) and УРС-50И (URS-50I) were used depending on the method. The microhardness was measured according to Rockwell by

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State Diagram of the Zirconium - Beryllium System

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means of a diamond cone with a load of 15 kg. In the zirconium - beryllium system there are four intermediate phases: $ZrBe_2$, $ZrBe_6$, $ZrBe_9$, and $ZrBe_{12}$. The first three originate from peritectic reactions at 1235°C, 1475°C, and 1555°C. The last phase originates with an open maximum at 1645°C. At 965°C and a beryllium content of 5% there results an eutectic between $ZrBe_2$ and zirconium. An addition of beryllium to zirconium lowers the temperature of α⇌β transformation and leads to an eutectic at 800°C. The solubility of beryllium in α-zirconium is less than 0.1% by weight and in β-zirconium less than 0.3% by weight. The solubility of zirconium in beryllium does not exceed 0.3% by weight. There are 8 figures, 1 table, and 5 non-Soviet references.

4

SUBMITTED: February 3, 1960

Card 2/2

B/137/62/000/007/005/072
A052/A101

AUTHORS: Yevstyukhin, A. I., Yemel'yanov, V. S., Godin, Yu. G.

TITLE: Investigation of molten Na, K and Zr chloride-fluoride systems

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1962, 11, abstract 7A60 (In collection: "Metallurgiya i metalloved. chist. metallov". Moscow, Gosatomizdat, no. 3, 1961, 5 - 16)

TEXT: To develop an electrolytic method of producing Zr, the system $NaCl-K_3ZrF_7$ and the electrolyte of the bath in the different stages of the work of the initial composition of $NaCl-K_2ZrF_6$ were investigated. The systems $KF-ZrF_4$ and $NaF-ZrF_4$ were studied. The constitution diagram of the system $NaCl-K_3ZrF_7$ was plotted by the data of thermal and X-ray analyses, chemical compounds $K_3ZrF_7 \cdot NaCl$ (50% mol. NaCl) and $K_3ZrF_7 \cdot 5NaCl$ (82.5% mol. NaCl) were found. The formation of a stable fluoride compound K_3ZrF_7 in chloride-fluoride electrolytes was proved by means of a chemical, thermographic and X-ray analyses. The mechanism of the electrolytic process of producing Zr out of chromide-fluoride electrolytes is considered.
[Abstracter's note: Complete translation]

V. Zhuravska

Card 1/1

S/137/62/000/008/018/065
A006/A101

AUTHORS: Godin, Yu. G., Yevstyukhin, A. I., Yemel'yanov, V. S., Rusakov, A. A., Suchkov, I. I.

TITLE: On the solubility of metals in carbon

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1962, 8, abstract 8I51 (In collection: "Metallurgiya i metalloved. chist. metallov", no. 3, Moscow, Gosatomizdat, 1961, 284 - 289)

TEXT: Solubility of Zr and Nb in C was studied. Specimens were melted in an arc furnace in argon atmosphere. As far as cooling on the Cu-bottom of an arc furnace proceeds very rapidly, the alloys were quenched from sub-solidus temperature. The structure of these alloys consisted of primary graphite grains and eutectics, i.e. a mixture of graphite and Zr or Nb carbides. Separation of Zr or Nb carbides from graphite is performed by means of their chemical dissolving in a mixture of hydrofluoric and nitric acids. The undissolved graphite powder was subjected to X-ray and spectral analyses after washing and drying. The investigations did not show Zr and Nb solubility in C.
[Abstracter's note: Complete translation] V. Srednogorska

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S/755/61/000/003/001/027

AUTHORS: Yevstyukhin, A. I., Yemel'yanov, V. S., Godin, Yu. G.

TITLE: Investigation of fused chloride-fluoride sodium, potassium, and zirconium systems.

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chistykh metallov. no.3. 1961, 5-16.

TEXT: This paper is concerned with the fusions employed in the electrolytic preparation of Zr (cf., e. g., Steinberg, M. et al., J. Electrochem. Soc., v.101, no.2, 1954, 68-73) and reports the first preliminary results of the experimental investigation described in the title at the MIFI (Moscow Engineering Physics Institute). The experimental methodology was described previously by the 2 senior authors in Atomnaya energiya, no.4, 1956, 108-112, and no.5, 1956, 80-85. In essence, it comprises a thermal analysis of the fusions in a shielding atmosphere, an X-ray phase analysis, and a chemical analysis. It was quickly found that at high temperature (T) the binary system $NaCl-K_2ZrF_6$ (cf. Steinberg ref.) breaks down into a number of complex compounds; hence a study of the $KF-ZrF_4$ and $NaF-ZrF_4$ systems became mandatory. The $KF-ZrF_4$ phase diagram, investigated previously (1957) by the authors up to 33 mol-% ZrF_4, is now extended to 66 mol-% ZrF_4. The $NaF-ZrF_4$

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phase diagram published by Barton, C..et al. Phys. Chem. v.62, no.6, 1958, 665-676, is reproduced and interpreted in detail. The specific purpose of the currently begun investigation of the binary NaCl-K_3ZrF_7 is to clarify the many questions regarding the alterations of the composition of the initial NaCl-K_2ZrF_6, and especially the increasing stability of the resulting compounds and, hence, decreasing yield in pure Zr, with the progress of the electrolytic reaction in which K_3ZrF_7 is an intermediate product. Details of the preparation of the initial materials are explained: K_2ZrF_6 is precipitated from aqueous solutions, fractionally crystallized to reduce the Hf content to 0.05 wt.%, dewatered by remelt in an Ar atmosphere in a Ni crucible), and comminuted in an agate mortar. Analytically pure KF was also remelted but was used in the form of small lumps, because comminution was rendered difficult by its hygroscopicity. KF and K_2ZrF_6 were mixed in stoichiometric proportions and fused in a Ni crucible under dry Ar. Any residual KF is readily selectively dissolved by water. The only thermally detectable effect occurs at 930°C. X-ray analysis reveals in it a face-centered cubic lattice with $a = 8.969$Å and discriminates it readily from KF and K_2ZrF_6. The analytically pure NaCl was dried for 12 hrs at 200°C and was comminuted in an agate mortar. The full range of NaCl-K_3ZrF_7 ratios was tested in both cooling and heating (near-full-page tabulation) at 3-5°C/min after 30-min holding in the molten state for homogenization. The first T halt is interpreted as corresponding to the precipitation of crystals of

the most refractory melt component, probably fluorides. The next halt, probably, is that of the crystallization of the chlorides. The third halt, evidently, is that of the crystallization of the eutectic and the peritectic reaction. No explanation is had for the 4th halt, which appeared in but two of the fusions explored. It could, possibly, be attributed to allotropic or other solid-phase transformations. The K_3ZrF_7 phase occurs in all fusions with up to 95 mol·% NaCl, but with a significant drop-off beyond 85 mol·%. The NaCl is in evidence in fusions with 100 to 75 mol·% NaCl, with a sharp drop-off below 75 mol·%. A new phase appears with NaCl from 30 to 85 mol·%, with a maximum at 50 mol·%, indicating the possible existence of a $K_3ZrF_7 \cdot NaCl$ chemical compound. Another, as yet unknown, phase is noted in alloys with 60 to 95 mol·% NaCl, with a maximum at 82.5 mol·%, which quantitative phase analysis identifies as the chemical compound $K_3ZrF_7 \cdot 5NaCl$. The $NaCl\text{-}K_3ZrF_7$ phase diagram constructed from these data is characterized by unlimited solubility of the components in the liquid state and the formation of chemical compounds in the solid state. $K_3ZrF_7 \cdot 5NaCl$ is formed by a peritectic reaction at 570°C; $K_3ZrF_7 \cdot NaCl$ is formed similarly at 600°. Eutectic point at 73 mol·% NaCl and 540°. The solid-state transformations regarded as less certain are tentatively plotted by broken lines. The results of a thermal analysis of the electrolytic bath originally consisting of $NaCl\text{-}K_2ZrF_6$ in correlation with the $NaCl\text{-}K_3ZrF_7$

phase diagram are tabulated. The same 3 temperature effects are detected. The results of a chemical and thermal analysis of the water-insoluble deposits in five electrolyte specimens are tabulated; the existence of K_3ZrF_7 is clearly identified. The mechanism of the electrolysis is reconstructed: From the initial electrolyte $NaCl\text{-}K_2ZrF_6$ Cl is evolved at the annode and a new component, NaF reacts with K_2ZrF_6, forming K_3ZrF_7, which dissociates forming the complex anions ZrF_7^{3-}, which, upon sufficient dechloridization of the electrolyte, discharge at the anode and form $2ZrF_7^{3-} + 6\,NaCl - 3e \rightarrow 2Na_3ZrF_7 + 3\,Cl_2$ (1), while at the cathode the complex anions dissociate delivering ultimately neutral Zr. Thus the summary reaction in a highly chloride-concentrated bath is $K_3ZrF_7 + 4NaCl \rightarrow Zr + 3KF + 4NaF + 2Cl_2$ and in chloride-deficient electrolyte $K_3ZrF_7 + C \rightarrow Zr + 3KF + CF_4$, the last compound of which is an anode product. There are 6 figures, 3 tables, and 8 references (6 Russian-language Soviet and the 2 English-language U.S. papers cited in the text of the abstract).

ASSOCIATION: MIFI (Moscow Engineering Physics Institute).

S/081/62/000/022/004/088
B177/B186

AUTHORS: Godin, Yu. G., Yevstyukhin, A. I., Yemel'yanov, V. S., Rusakov, A. A., Suchkov, I. I.

TITLE: The solubility of metals in carbon

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 42, abstract 22B277 (In collection: Metallurgiya i metalloved. chist. metallov. no. 3, Moscow, Gosatomizdat, 1961, 284-289)

TEXT: A method for determining the existence of solubility of high-melting refractory metals in C is proposed, based on quenching alloys with a high C content from heterogeneous regions. By separating the crystals first evolving from the main mass of the specimen and examining them, both the occurrence and the value of solubility can be established. This method is employed in studying the solubility of Nb and Zr in C. The specimens are prepared by melting in an arc furnace with a graphite electrode and a water-cooled copper crucible. The graphite crystals are isolated by pickling the carbide phase in a heated mixture of HF and HNO_3. X-ray and spectral analyses of the residue after pickling failed to

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The solubility of metals in ...

S/081/62/000/022/004/088
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reveal the presence of Nb and Zr in the graphite. [Abstracter's note: Complete translation.]

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S/826/62/000/000/003/007
D408/D307

5.4700

AUTHORS: Yevstyukhin, A.I., Yemel'yanov, V.S. and Godin, Yu.G.

TITLE: Investigation of melts of the chloride-fluoride system of sodium, potassium, and zirconium

SOURCE: Fizicheskaya khimiya rasplavlennykh soley i shlakov; trudy Vses. soveshch. po fiz. khimii raspl. soley i shlakov, 22 - 25 noyabrya 1960 g., Moscow. Metallurgizdat, 1962, 63 - 71

TEXT: Results of an investigation of the binary system NaCl--K_3ZrF_7, and its behavior under electrolysis, are given. It was assumed that these systems possess many common features and that the study of one system would facilitate the understanding of the others. The raw materials used for the investigation were KF, NaCl and K_2ZrF_6, the latter being precipitated from aqueous solution whereby the hafnium content was reduced to 0.05 % by the method of fractional crystallization. K_3ZrF_7 was prepared by fusing together stoichiometric quantities of KF and K_2ZrF_6 under argon.

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Investigation of melts ...

Thermal analysis of 25 samples of the binary system, containing 100 - 0 % K_3ZrF_7, was carried out mainly by the cooling curve method, the heating curve method being used in a few cases. Up to four inflection points were found in each thermogram, the first two inflections corresponding to the separation of fluoride and chloride crystals respectively, and the third to the crystallization of a eutectic or a peritectic reaction point. The fourth inflection, observed for only two of the melts, possibly indicated an allotropic or other solid phase transformation. X-ray analysis showed that all melts containing up to 95 mol.% NaCl possessed the K_3ZrF_7 phase, and the NaCl phase was present in melts containing 100 - 75 mol.% NaCl. A new phase, K_3ZrF_7.NaCl, and a previously unknown phase, K_3ZrF_7.5NaCl, were detected in melts containing 30-85 and 60-95 mol.% NaCl respectively. The phase diagram of the NaCl--K_3ZrF_7 system was constructed; this showed that K_3ZrF_7.NaCl and K_3ZrF_7.5NaCl from through peritectic reactions at 570 and 600°C respectively, and that a eutectic occurs at 73 mol.% NaCl and 540°C. The water-insoluble residues of electrolyte samples, taken from an electrolytic cell, were shown to be K_3ZrF_7. From the results of this

and other work, the authors suggest a mechanism for the electrolytic production of zirconium from fluoride-chloride melts, the overall reactions being: a) with a sufficiently high concentration of chloride in the electrolyte

$$K_3ZrF_7 + 4NaCl \longrightarrow Zr + 3KF + 4NaF + 2Cl_2;$$

and b) in an electrolyte very defficient in chloride

$$K_3ZrF_7 + C \longrightarrow Zr + 3KF + CF_4.$$

Both reactions occur simultaneously with moderate concentrations of chloride in the electrolyte. There are 6 figures and 3 tables.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut
(Moscow Engineering Physics Institute)

ACCESSION NR: AT4005966 S/2755/63/000/004/0149/0159

AUTHOR: Yevstyukhin, A. I.; Godin, Yu. G.; Kokhtev, S. A.; Suchkov, I. I.

TITLE: Study of alloys of the rhenium carbon system

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Metallurgiya i metallovedeniye chisty*kh metallov, no. 4, 1963, 149-159

TOPIC TAGS: rhenium carbon alloy, rhenium carbon alloy composition, rhenium carbon alloy property, alloy melting point, alloy microstructure, rhenium carbon phase diagram, rhenium carbon system

ABSTRACT: The interaction between Re and C and some evidence for the development of stable rhenium carbide are discussed. Spectrally pure carbon rods 5 mm in diameter and powdered Re containing 99.95% Re, 0.007% Al, 0.004% Fe, 0.008% K, 0.007% Ca, $<$ 0.001% Cu, $<$ 0.0005% Na, $<$ 0.0001% Ni and 0.005% Mo were used as basic components for making alloys by two methods. When the C content was $>$ 50 at. %, the mixed Re and carbon powders were briquetted under a pressure of 35-45 metric tons, the moldings were clinkered in vacuum resistance furnaces at 1800 - 2000 C and were remelted in arc furnaces with an argon atmosphere. When the amount of C was low, the powdered Re with graphite pieces was clinkered without pressure in arc furnaces with an argon atmosphere. The melting point of the

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ACCESSION NR: AT4005966

samples was determined with an OP-48 optical pyrometer. Heating at 2000C in a vacuum of 1.10^{-4} mm showed an absorption value of 50 -60C. Further tests included annealing at 1900 - 2200C and oil hardening in a vacuum of 10^{-4}mm. Standard microsections were prepared. The structure of the alloys was developed by etching, the powdered alloy was examined by x-ray, and the macro- and micro-hardness were determined. X-ray analysis of the graphite separated from cast alloys was used to determine the presence or absence of Re solubility in C. Increasing the amount of C lowers the melting point of Re-C alloys. Those with 0.35 wt. % C have a common horizontal solidus line at 2500C. Microphotography of these solid alloys indicates that their structure varies with the C content. Alloys with 1.3% C have a eutectic structure. A lowering of the quenching temperature to 1900C produces disappearance of the graphite needles and their substitution by white formations. Visual comparison of the roentgenograms of pure Re, C, and Re-C alloys shows the presence of a new Σ phase. X-ray examination of the alloys showed the absence of solubility of Re in C. The hardness of cast and quenched alloys increases with the C content up to 0.5 weight %, after which it decreases. These effects of the C concentration in alloys are explained and the properties of the Re-C system are tabulated. On the basis of these findings, the authors constructed the partial phase diagram shown in Fig. 1 of the Enclosure. This shows the presence of rhenium carbide, confirmed by the lines of a new ξ' phase in

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roentgenograms. Rhenium carbide is probably stable at 1900 - 2200C. Increasing the C in alloys increases the quantity of bound carbon, also indicating a chemical bond. In microstructures, the Re-C appears in the form of a white edge of graphite needles, which may explain the extreme hardness of alloys with 35.7-37.1 at. % C. Orig. art. has: 13 figures and 3 tables.

ASSOCIATION: Inzhenerno-fizicheskiy institut, Moscow (Engineering Physics Institute)

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ACCESSION NR: AT4005966 ENCLOSURE: 01

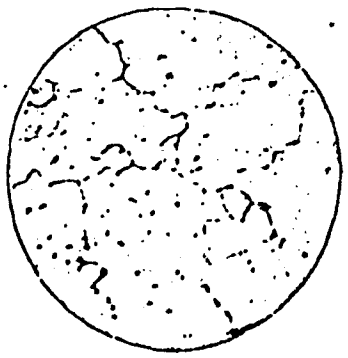

Fig. 1 Microstructure of a Cast Alloy of Re + 0.15% C (X200)

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GODIN, Yu. N. (DECEASED) 1963/2

c' 1962

GEOPHYICS -
prospecting

KNUNYANTS, I.L., glav. red.; MAKHAROVSKIY, G.Ya., zam. glav. red.; BUSEV, A.I., red.; VARSHAVSKIY, Ya.M., red.; GEL'PERIN, N.I., red.; DOLIN, P.I., red.; KIREYEV, V.A., red.; MEYERSON, G.A., red.; MURIN, A.N., red; POGODIN, S.A., red.; REBINDER, P.A., red.; SLONIMSKIY, G.S., red.; STEPANENKO, B.N., red.; EPSHTEYN, D.A., red.; VASKEVICH, D.N., nauchnyy red.; GALLE, R.R., nauchnyy red.; GARKOVENKO, R.V., nauchnyy red.; GODIN, Z.I., nauchnyy red.; KOSTOVENKO, N.P., nauchnyy red.; LEBEDEVA, V.A., mladshiy red.; TRUKHANOVA, M.Ye., mladshiy red.; FILIPPOVA, K.V., mladshiy red.; ZHAROVA, Ye.I., red.; KULIDZHANOVA, I.D., tekhn. red.

[Concise chemical encyclopedia] Kratkaia khimicheskaia entsiklopediia. Red. koll.: I.L.Knunyants i dr. Moskva, Gos. nauchn. izd-vo "Sovetskaia entsiklopediia." Vol.1. A - E. 1961. (MIRA 15:2)
1262 columns.
(Chemistry--Dictionaries)

KNUNYANTS, I.L., glav. red.; BAKHAROVSKIY, R.Ya., zam. glav. red.; VASKEVICH, D.N., nauchn. red.; VONSKIY, Ye.V., nauchn. red.; GALLE, R.R., nauchn. red.; GODIN, Z.I., nauchn. red. MOSTOVENKO, N.P., nauchn. red.; TRUKHANOVA, M.Ye., red.

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GODINA, A.Ya.

New fossil giraffe from Mongolia. Trudy Paleont.inst. 47 '54.
(MLRA 7:10)
(Mongolia--Giraffes, Fossil) (Giraffes, Fossil--Mongolia)

GODINA, A.Ya.; ALEKSEYEVA, L.I.

Remains of a giraffe from the Pliocene of the Northern Caucasus. Paleont. zhur. no.2:130-131 '61. (MIRA 14:6)

1. Paleontologicheskiy institut AN SSSR i Geologicheskiy institut AN SSSR.
(Armavir region--Giraffes, Fossil)

GODINA, A.Ya.

New species of Samotherium from Kazakhstan. Paleont.zhur. no.1: 131-139 '62. (MIRA 15:3)

1. Paleontologicheskiy institut AN SSSR.
(Kazakhstan--Giraffes, Fossil)

GODINA, A.Ya.; DUBINSKIY, A.A.

First find of a fossil giraffe in Turkmenia. Biul. MOIP. Otd.geol. 38 no.1:155-157 Ja-F '63. (MIRA 16:5)
(Turkmenistan—Giraffes, Fossil)

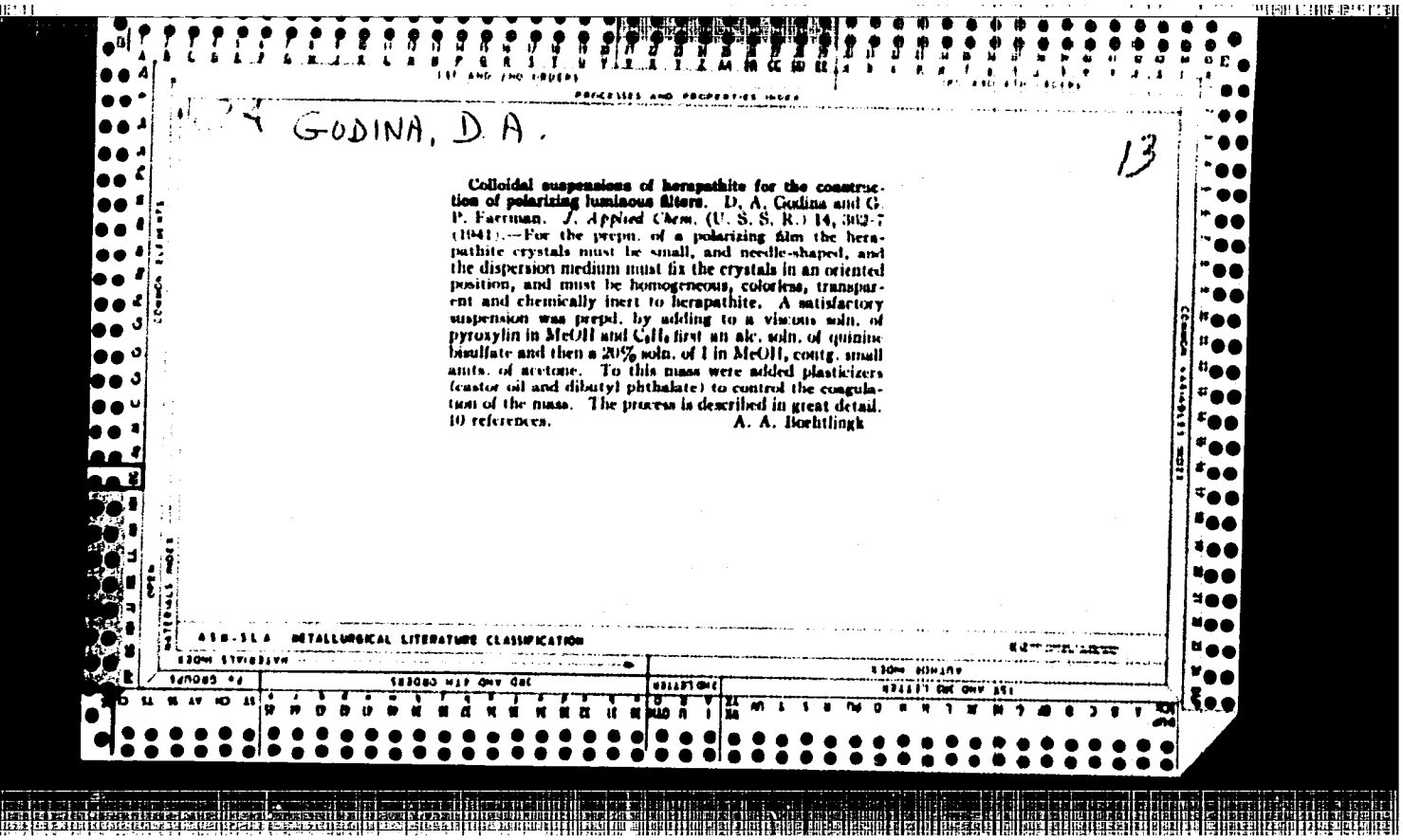
GODINA, A.Ya.

Finds of giraffes of Palaeotragus genus from Sarmatian sediments in Moldavia. Izv.AN Mold.SSR no.7:68-69 '64.

(MIRA 18:12)

GODINA, A.Ya.

Some problems of the development of Giraffidae. Biul. MOIP. Otd. geol. 39 no.5:146-147 S-O '64. (MIRA 18:2)



GODINA, D. A.

13

Colloidal suspensions of herapathite for the construction of polarizing luminous filters. D. A. Godina and G. P. Faerman. *J. Applied Chem.* (U. S. S. R.) 14, 302-7 (1941).—For the prepn. of a polarizing film the herapathite crystals must be small, and needle-shaped, and the dispersion medium must fix the crystals in an oriented position, and must be homogeneous, colorless, transparent and chemically inert to herapathite. A satisfactory suspension was prepd. by adding to a viscous soln. of pyroxylin in MeOH and CaH$_2$ first an alc. soln. of quinine bisulfate and then a 20% soln. of I in MeOH, contg. small amts. of acetone. To this mass were added plasticizers (castor oil and dibutyl phthalate) to control the coagulation of the mass. The process is described in great detail. 10 references. A. A. Berhtlingk

GODINA, D. A. PA 20/49T95

USSR/Physics Oct 48
Filters, Light
Light - Polarization

"Optic Properties of Polarized Light Filters Made From Polyvinyl Alcohol," D A. Godina, State Ord of Lenin Opt Inst, 9 pp

"Zhur Tekh Fiz" Vol XVIII, No 10

Discusses measurements of spectral filtration and general filtration, dispersion of light and the aperture angle of polarization. Submitted 16 Dec 47.

[redacted] 20/49T95

Optical properties and structure of polyiodides. D. A. Godina and G. P. Fierman. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 800-78(1960).—(1) The cryst. compd. (I) obtained by the action of an alc. soln. of iodine on quinine bisulfate is formed only in the presence of I^- ions. Contrary to Jorgensen, the various modifications of I, differing by their color, correspond to an definite stoichiometric ratios of I_3 to I^-. The variation of the I_3 content on passing from one modification to another is continuous. Similar compds., all pleochroic, are formed also by other alkaloids, cinchonine, quinidine, etc., and also by inorg. complexes of Co and Pt. The polyiodide nature of I was established by observations of the change of the color of suspensions of very fine crystals obtained at a const. ratio quinine/HI = 2:, with the I_2/HI ratio = 1, 1.25, 1.50, 1.75, 2.00, the color of the suspension was, resp., red, purple, lilac, blue, dark blue. Consequently, iodine is added only through the agency of I^-, i.e. through formation of the polyiodide ion I_3^-. Quinine in excess of 2 mols. per mol. HI enters no reaction either with HI or with I_2. The excess I_2 equiv. to quinine enters the reaction to form compds. with a I_2/HI ratio the higher, the smaller the amt. of HI. With the excess HI reacts with I_2 to form I_3^-, with the result that the amt. of iodine entering the compn. of I is reduced. Gradual increase of the amt. of HI used in the prepn. of I, or addn. of increasing amts. of HI to a suspension of I, results in a continuous change of the color from dark blue to red, and finally in decompn. of I. (2) Similar properties are exhibited by polyvinyl alc. which, in const. compn., gives a color reaction with alc. KI + I_2, disappearing on heating and reappearing on cooling. With the rise in temp. from 10° to 100°, the color changes from green to blue. Stretching of a polyvinyl alc. film, impregnated with iodine, produces strong pleochroism: the film is more resistant to heat and to solvents. A film with its axis parallel to the direction of stretching is colored rapidly; a film impregnated with I_2 and an insufficient amt. of KI, which normally is brown and turns blue only after some time, becomes [illegible] immediately on stretch-

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$C_{17}H_{17}O_2N$, oil, b.p. 135°–140° (bath)/0·01 mm. (*picrate*, $C_{17}H_{17}O_2N,C_6H_3O_7N_3$, m.p. 137°–139°), respectively. Hydrogenation in 50% aq. AcOH over Pd-C at room temp. and 1 atm. for 2–4 days yields 80–95% of 1 : 9 : 10-*trimethoxy*-3-*methyl*-[1 : 2 : 3 : 5 : 6 : 11-hexahydrobenzpyrrocoline], $C_{17}H_{25}O_3N$, oil, b.p. 110°–120° (bath)/0·02 mm. (*hydrochloride*, m.p. 240°–245° (decomp.); *picrate*, $C_{17}H_{25}O_3N,C_6H_3O_7N_3$, m.p. 173°–175°). 9 : 10-*dimethoxy*-2 : 3-*dimethoxy*-3 : 3-*dimethyl*-[1 : 2 : 3 : 5 : 6 : 11-hexahydrobenzpyrrocoline]-4 : 5 : 6 : 9-tetrahydro-9-azabenzandane], $C_{19}H_{29}O_3N$, oil, b.p. 150°–155° (bath)/0·3 mm. (*hydrochloride*, m.p. 213°–216° (decomp.); *picrate*, $C_{19}H_{29}O_3N,C_6H_3O_7N_3$, m.p. 163°–164°). 10 : 11-*dimethoxy*-6-*methyl*-[6 : 7-*dimethoxy*-1-*methyl*-], $C_{16}H_{23}O_2N$, oil, b.p. 150°–155° (bath)/1 mm. (*hydrochloride*, m.p. 214°–217° (decomp.); *picrate*, $C_{16}H_{23}O_2N,C_6H_3O_7N_3$, m.p. 181°–183°), and 10 : 11-*dimethoxy*-3 : 4-*dimethyl*-[6 : 7-*dimethoxy*-1 : 2-*dimethyl*-1 : 2 : 3 : 4 : 5 : 6-hexahydrobenzyridocoline]-1 : 2 : 3 : 4 : 9 : 10 : 11 : 13-octahydro-11-azaphenanthrene], $C_{21}H_{33}O_4N$, oil, b.p. 130°–135° (bath)/0·01 mm. (*hydrochloride*, m.p. 217°–219° (decomp.); *picrate*, $C_{21}H_{33}O_4N,C_6H_3O_7N_3$, m.p. 197°–198°), respectively. The tertiary bases, after conversion into the quaternary benzylammonium halides (by treatment with CH_3PhI in C_6H_6 at the b.p. for 2 hr.) undergo Hofmann degradation, on treatment with Ag_2O in 50% aq. MeOH followed by extended heating of the product in H_2O, to yield 70–90% of 2-(4′ : 5′-*dimethoxy*-2′-*vinylphenyl*)-1-*benzyl*-5-*methylpyrrolidine*, $C_{21}H_{25}O_2N$, an oil, b.p. 125°–135° (bath)/0·001 mm., -4 : 5-*dimethylpyrrolidine*, $C_{23}H_{27}O_2N$, oil, b.p. 130°–140° (bath)/0·01 mm., -6-*methylpiperidine*, $C_{24}H_{29}O_2N$, oil, b.p. 150°–160° (bath)/0·01 mm., and -5 : 6-*dimethylpiperidine*, $C_{25}H_{31}O_2N$, oil, b.p. 180°–190° (bath)/1 mm., respectively; hydrogenation in 50% aq. AcOH over Pd-C leads to saturation of the double-bond after 2–3 hr. at room temp., followed by hydrogenolysis of the CH_2Ph group after a further 8–10 hr. at 55°–60°, to yield 90°–95% of 2-(4′ : 5′-*dimethoxy*-2′-*ethylphenyl*)-5-*methylpyrrolidine*, $C_{15}H_{23}O_2N$, oil, b.p. 105°–115° (bath)/0·002 mm. (*picrate*, $C_{15}H_{23}O_2N,C_6H_3O_7N_3$, m.p. 151°–156°), -4 : 5-*dimethylpyrrolidine*, $C_{16}H_{25}O_2N$, oil, b.p. 125°–135° (bath)/0·2 mm. (*picrate*, $C_{16}H_{25}O_2N,C_6H_3O_7N_3$, m.p. 108°–112°), -6-*methylpiperidine*, an oil, b.p. 140°–145° (bath)/1 mm. (*picrate*, $C_{16}H_{25}O_2N,C_6H_3O_7N_3$, m.p. 205°–206°), and -5 : 6-*dimethylpiperidine*, $C_{17}H_{27}O_2N$, oil, b.p. 130°–140° (bath)/1 mm. (*picrate*, $C_{17}H_{27}O_2N,C_6H_3O_7N_3$, m.p. 197°–200°).

E. G. Percival

GODINA, D.A.; SAVKO, S.S.; FAYERMAN, G.P.

Polarization and its use in stereoscopic printing and projection. Zhur. nauch. i prikl. fot. i kin. 3 no.1:47-50 Ja-F '58. (MIRA 11:2)

1.Gosudarstvennyy opticheskiy institut im. S.I. Vavilova.
(Photography, Stereoscopic)

AUTHORS: [illegible], D.A. and Payerman, G.P. 307/51-5-3-5/21

TITLE: Investigation of the Absorption Spectra of Herapathite Crystals (Issledovaniye spektrov pogloshcheniya kristallov gerapatita)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 276-281 (USSR)

ABSTRACT: The authors measured the thicknesses, absorption spectra and polarizations of thin flat crystals of herapathite containing various amounts of iodine and they found also the refractive indices of these crystals. The authors used Balabakh's spectrophotometric apparatus (Ref 4) which was slightly modified (Fig 1). The measured crystal was illuminated with linearly polarized light, monochromatic within 50 Å. A polyvinyl alcohol filter was used as the polarizer. The thicknesses of crystals (0.2-2.0 μ) were measured using Linnik's interferometer (Ref 5) in white light (mean λ = 550 mμ). The accuracy of thickness measurement was of the order of λ/4. The herapathite crystals were prepared by slowed-down reactions. According to the conditions of the synthesis one could obtain crystals with the composition $4Ch.3H_2SO_4.2HI.2I_2.H_2O$ (quinine sulphate polyiodide) which had the ratio $I_2/HI = 1$ and were red in color, or lilac crystals which

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had the ratio $I_2/HI > 1$. Table 1 gives the optical densities for three lilac crystals of the same thickness (0.38 μ, which were prepared under the same conditions. This table gives also the variations of the optical density D for a given wavelength (λD). Figs 2 and 3 and Table 2 give the absorption results for red crystals of various thicknesses. With increase of crystal thickness the boundary of the spectral transmission and the degree of polarization are displaced towards longer wavelengths and the monochromatic radiation is absorbed in accordance with Bugar's law (zakon Bugera). The variations of the calculated values of the absorption coefficient lie within the experimental error. Table 3 gives the optical densities and the refractive indices of red and lilac crystals of the same thickness (0.42 μ). Table 3 shows that absorption in lilac crystals is much higher than that in red crystals. Lilac crystals lose iodine when kept in air and, without any change in the form, become red in colour (Fig 4). The absorption coefficients of these crystals approach those the corresponding values of the red crystals. If such a "reddened" crystal is placed in iodine vapour for one minute it becomes lilac again and its former properties return (Fig 5). The dependence of the optical density D on the thickness of lilac crystals is given in Fig 6 and Table 4.

The latter table gives also the calculated values of the absorption coefficient for these lilac crystals. The observed results may be explained if we assume that the absorption by lilac crystals consists of two components: one which varies with the crystal thickness according to Bugor's law and is determined by the properties of the lattice of red crystals, and a second component which is constant and is due to a layer of molecular iodine which, it is suggested, is adsorbed on lilac crystals. This adsorbed layer produces the lilac colour and changes the chemical composition of the crystal making the ratio I_2/HI greater than 1. There are 6 figures, 4 tables and 5 references, 5 of which are Soviet.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S.I. Vavilova (State Optical Institute imeni S.I. Vavilov)

SUBMITTED: November 1, 1957

1. Herapathite crystals--Spectra 2. Herapathite crystals--Growth 3. Herapathite crystals--Optical properties 4. Polarizing filters--Applications

AUTHORS: Godina, D.A. and Fayerman, G.P. SOV/51-5-3-3/21

TITLE: On the Dichroism of Crystalline Iodine (O dikhroizme kristallicheskogo yoda)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 282-285 (USSR)

ABSTRACT: Jörgensen (Ref 1) and Bovis (Ref 4) ascribed the dichroism of herapathite (quinine sulphate polyiodide) to the dichroism of iodine contained in it. To check this hypothesis the present authors measured the absorption spectra and polarizations of thin layers of crystalline iodine in the visible region. These measurements were made using the apparatus described in Ref 6. Thin transparent plates of crystalline iodine were prepared by the method of Wahl (Ref 3) and Bovis (Ref 4), i.e. by melting iodine and crystallizing it between two very closely spaced glass plates. The layers obtained were about 0.5 μ thick, but their thickness could not be measured exactly because of deformation of the glass plates in the process of preparation of these layers. The absorption spectra were measured in linearly polarized light at positions of maximum and minimum transmission, which corresponded to the parallel and perpendicular positions of the polarization planes of the polarizer and the iodine crystal. An

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Iodine--polyvinyl filter was used as the polarizer. Since it was not possible to determine the thickness of the crystals exactly, the absolute values of the absorption coefficient for the ordinary and extraordinary rays could not be found. Measurements of transmission in non-polarized light produces results which are similar to those obtained by Bovis (Ref 4), as shown by curves 1 and 2 in Fig 1. The dichroism of the crystals produced by the authors was considerably higher (Fig 2, curves a) than that of Bovis's crystals (Fig 2, curves b). Table 1 gives the wavelength dependence of the degree of polarization of the crystals prepared by the present authors. Under the same conditions of crystallization the absorption and the polarization of iodine crystals increases with their thickness (Fig 3 and Table 2). The dichroism of iodine crystals increases with the number of crystallites which are oriented in such a way that their optical axes

are parallel to each other. Fig 4 compares the transmission of red herapathite (curves 1) and iodine crystals (curves 2). This figure shows that the dichroism of herapathite crystals is due to iodine molecules oriented inside the herapathite crystal. There are 4 figures, 2 tables and 7 references, 2 of which are Soviet.

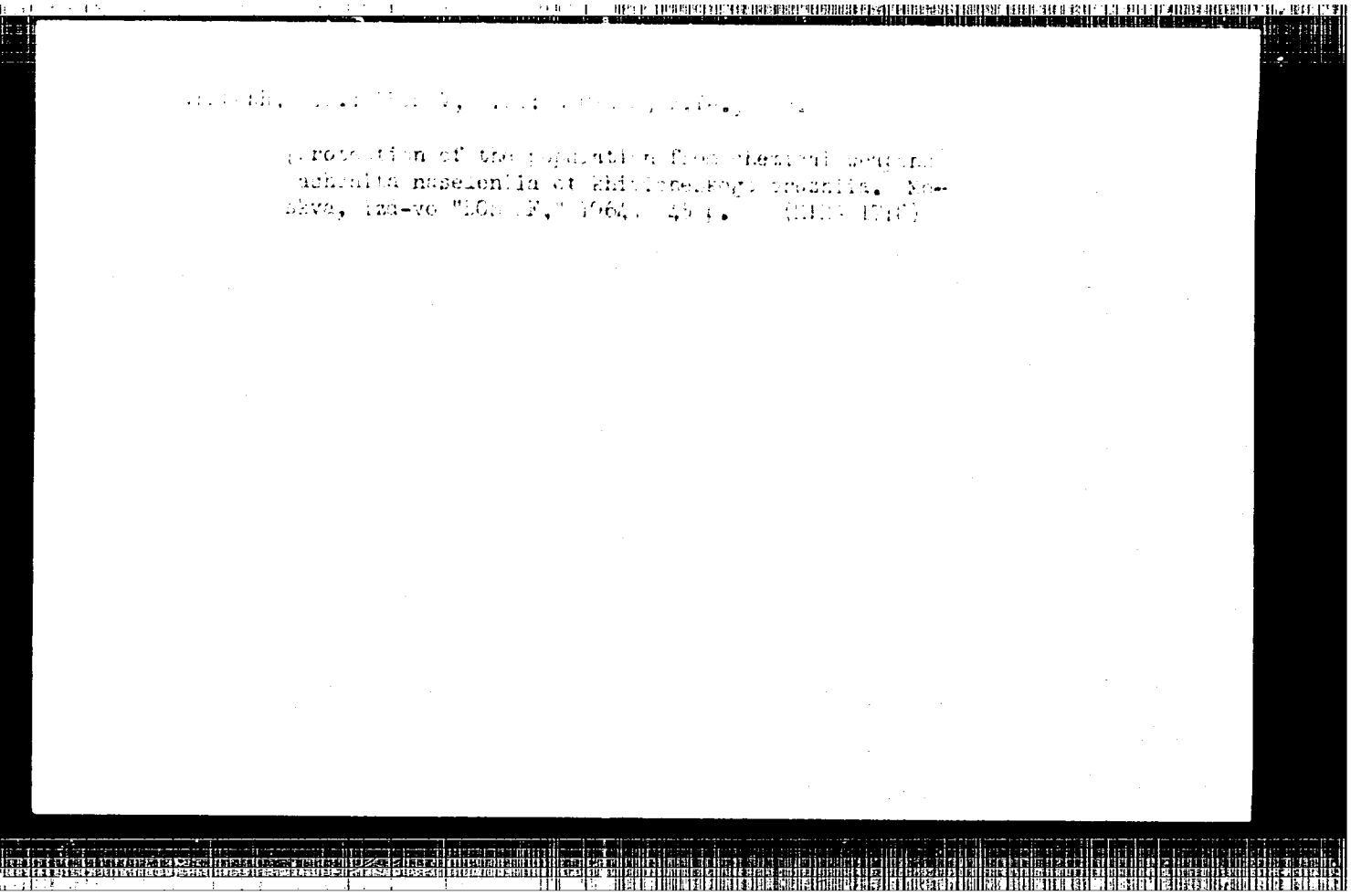
ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S.I. Vavilova (State Optical Institute imeni S.I. Vavilov)

SUBMITTED: November 1, 1957

Card 3/3 1. Herapathite crystals--Color 2. Iodine crystals--Color 3. Iodine crystals--Growth 4. Thin layers--Spectrographic analysis 5. Polarizing filters--Materials

VODOP'YANOV, Mikhail Vasil'yevich, Geroy Sovetskogo Soyuza;
GODUNOV, E.Ye., red.; SORKIN, M.Z., tekhn. red.

[Pilot Chkalov] Letchik Chkalov. Moskva, Izd-vo DOSAAF, 1963. 196 p. (MIRA 16:12)
(Chkalov, Valerii Pavlovich, 1904-1938)



SPIVAK, M.Ya.; ARGUDAYEVA, N.A.; NABIYEV, E.G.; CHISTOVICH, G.N.; RIVLIN, M.I.; SEMENOV, M.Ya.; KRUGLIKOV, V.M.; SHAL'NEVA, A.M.; TITROVA, A.I.; RAYKIS, B.N.; MILYAYEVA, Ye.N.; BRUDNAYA, E.I.; GODINA, I.F.; VOL'FSON, G.I.; SOSONKO, S.M.; KOLESINSKAYA, L.A.; VYSOTSKIY, B.V.; MALYKH, F.S.; MIROTVORTSEV, Yu.I.; SYCHEVSKIY, P.T.; GOPACHENKO, I.M.; KARPITSKAYA, V.M.; FETISOVA, I.A.; MARTYNYUK, Yu.V.; EMDINA, I.A.

Annotations. Zhur. mikrobiol., epid. i immun. 40 no.3:128-131 Mr '63. (MIRA 17:2)

1. Iz Kemerovskogo meditsinskogo instituta i Kemerovskoy klinicheskoy bol'nitsy No.3 (for Spivak, Argudayeva). 2. Iz Kazanskogo instituta usovershenstvovaniya vrachey imeni Lenina (for Nabiyev). 3. Iz Leningradskogo kozhnogo dispansera No. 1 (for Chistovich, Rivlin). 4. Iz Rostovskoy oblastnoy sanitarno-epidemiologicheskoy stantsii (for Semenov). 5. Iz Stavropol'skogo instituta vaktsin i syvorotok (for Kruglikov, Shal'neva, Titrova, Raykis). 6. Iz Kuybyshevskogo instituta epidemiologii, mikrobiologii i gigiyeny i TSentral'nogo instituta usovershenstvovaniya vrachey (for Milyayeva). 7. Iz Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnoy gigiyeny Glavnogo sanitarnogo upravleniya Ministerstva putey soobshcheniya i Detskoy poliklinik st. Lyublino

(Continued on next card)

SPIVAK, M.Ya.------- (continued) Card 2.

Moskovskoy zheleznoy dorogi (for Brudnaya, Godina). 8. Iz Vrachebno-sanitarnoy sluzhby Severnoy zheleznoy dorogi (for Vol'fson, Sosonko, Kolesinskaya). 9. Iz Vladivostokskogo instituta epidemiologii, mikrobiologii i gigiyeny i Primorskoy krayevoy protivochumnoy stantsii (for Vysotskiy, Malykh, Mirotvortsev, Sychevskiy, Gopachenko). 10. Iz Yaroslavskogo meditsinskogo instituta (for Karpitskaya). 11. Iz Aralmorskoy protivochumnoy stantsii (for Fetisova). 12. Iz L'vovskogo instituta epidemiologii, mikrobiologii i gigiyeny (for Martynyuk, Kudina).

MOROZOV, V.A. Prinimali uchastiye: NIKITIN, A.P., pomoshchnik entomologa; YEGIPKO, V.P., bonifikator; VENEDIKTOR, A.V., bonifikator; GODINA, M.S., bonifikator.

Distribution of mosquitoes of the genus Mansonia richiardii Fic. in Krasnodar Territory and methods for the collection of their larvae. Med. paraz. i paraz. bol. 34 no. 5:514-517 S-O '65 (MIRA 19:1)

1. Parazitologicheskiy otdel Krasnodarskoy krayevoy sanitarno-epidemiologicheskoy stantsii (for Morozov). 2. Kropotkinskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya (for Nikitin). Submitted December 29, 1964.

KELLER, E.K.; GODINA, N.A.; SAVCHENKO, Ye.P.

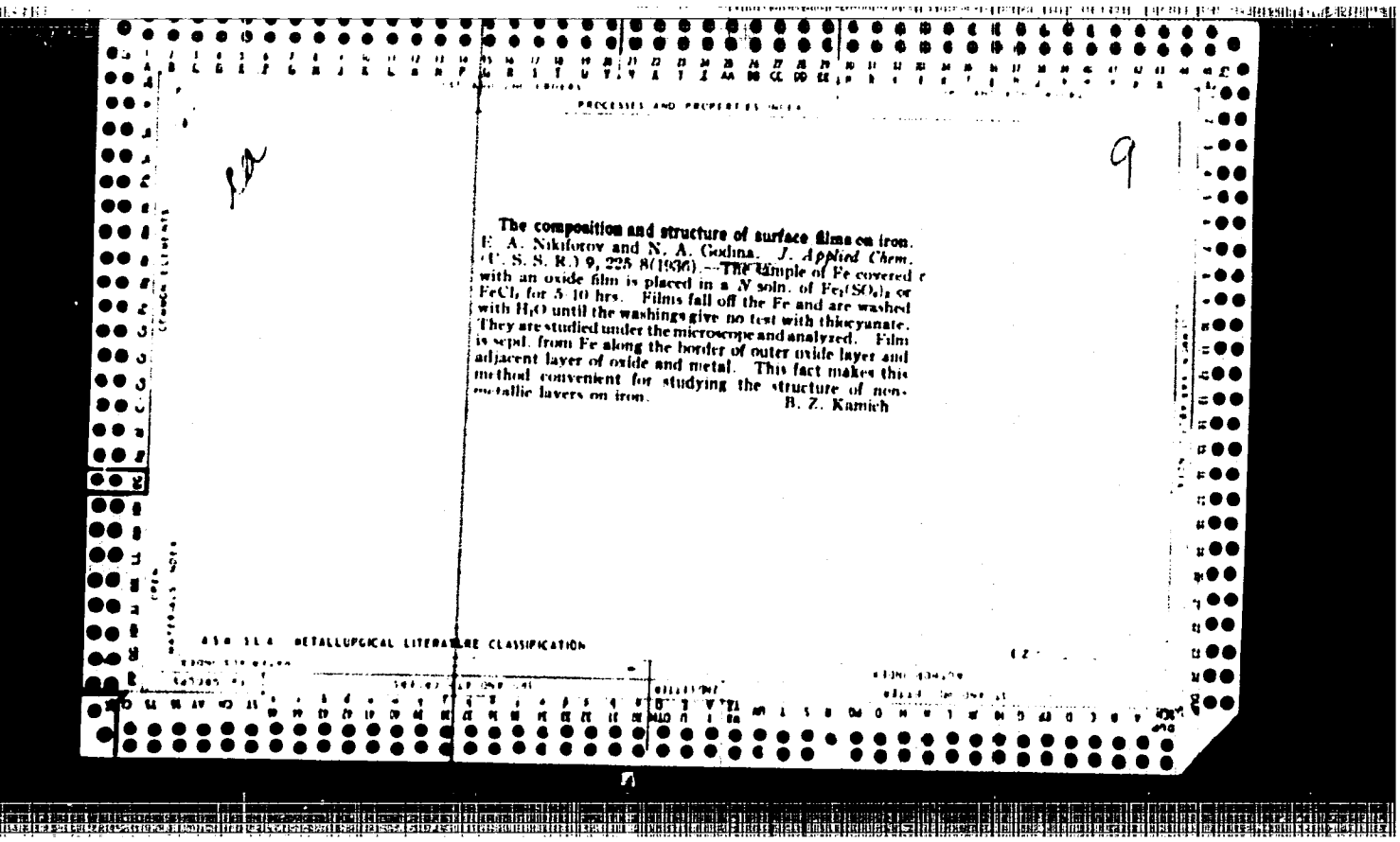
Reactions between silica and rare earth oxides (La_2O_3, Nd_2O_3, Gd_2O_3) in solid phases. Izv.AN SSSR.Otd.khim.nauk no.10:1728-1735 O '61. (MIRA 14:10)

1. Institut khimii silikatov AN SSSR.
(Silica) (Rare earth oxide)

KELER, E.K.; GODINA, N.A.; SAVCHENKO, Ye.P.

Reaction between silica and praseodymium oxide in solid phases.
Izv.AN SSSR.Otd.khim.nauk no.10:1735-1741 O '61. (MIRA 14:10)

1. Institut khimii silikatov AN SSSR.
(Silica) (Praseodymium oxide)



PROCESSES AND PROPERTIES INDEX

9

The composition and structure of surface films on iron. E. A. Nikiforov and N. A. Godina. *J. Applied Chem.* (U. S. S. R.) 9, 225-8(1936).—The sample of Fe covered with an oxide film is placed in a *N* soln. of $Fe_2(SO_4)_3$ or $FeCl_3$ for 5-10 hrs. Films fall off the Fe and are washed with H_2O until the washings give no test with thiocyanate. They are studied under the microscope and analyzed. Film is sepd. from Fe along the border of outer oxide layer and adjacent layer of oxide and metal. This fact makes this method convenient for studying the structure of non-metallic layers on iron.

B. Z. Kamich

ASM METALLURGICAL LITERATURE CLASSIFICATION

KELER, E.K.; GODINA, N.A.

Interaction in solid phases of zirconium dioxide with magnesium oxide, calcium and barium. Ogneupory 18 no.9:416-426 '53.
(MIRA 11:10)

1.Institut khimii silikatov AN SSSR.
(Zirconium oxides) (Chemical reactions)

[redacted], N. A.

"Reaction of Zirconium Dioxide With Certain High-Melting Oxides When Heated." Cand Chem Sci, Inst of Chemistry of Silicates, Acad Sci, USSR, Leningrad, 1954. (RZhKhim, No 6, Mar 55)

So: Sum. No 670 29 Sept 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

Godina, N. A.

USSR/Chemistry - Silicates

Card 1/1 Pub. 22 - 20/45

Authors : Keler, E. K., and Godina, N. A.

Title : Mechanism of formation of solid solutions in the ZrO_2-CaO system

Periodical : Dok. AN SSSR 103/2, 247-250, Jul 11, 1955

Abstract : The reactions occurring between ZrO_2 and CaO during heating were investigated. The formation of zirconate as an intermediate phase during the formation of solid solutions in the ZrO_2-CaO system is explained. It is shown that the reaction mechanism leading to the formation of solid solutions is due to the fact that calcium oxide is more active than zirconium dioxide and assumes the role of a so-called covering reagent. The conditions leading to the formation of solid solutions are discussed. Nine references: 5 Germ, 2 USSR and 2 USA (1929-1953). Graphs.

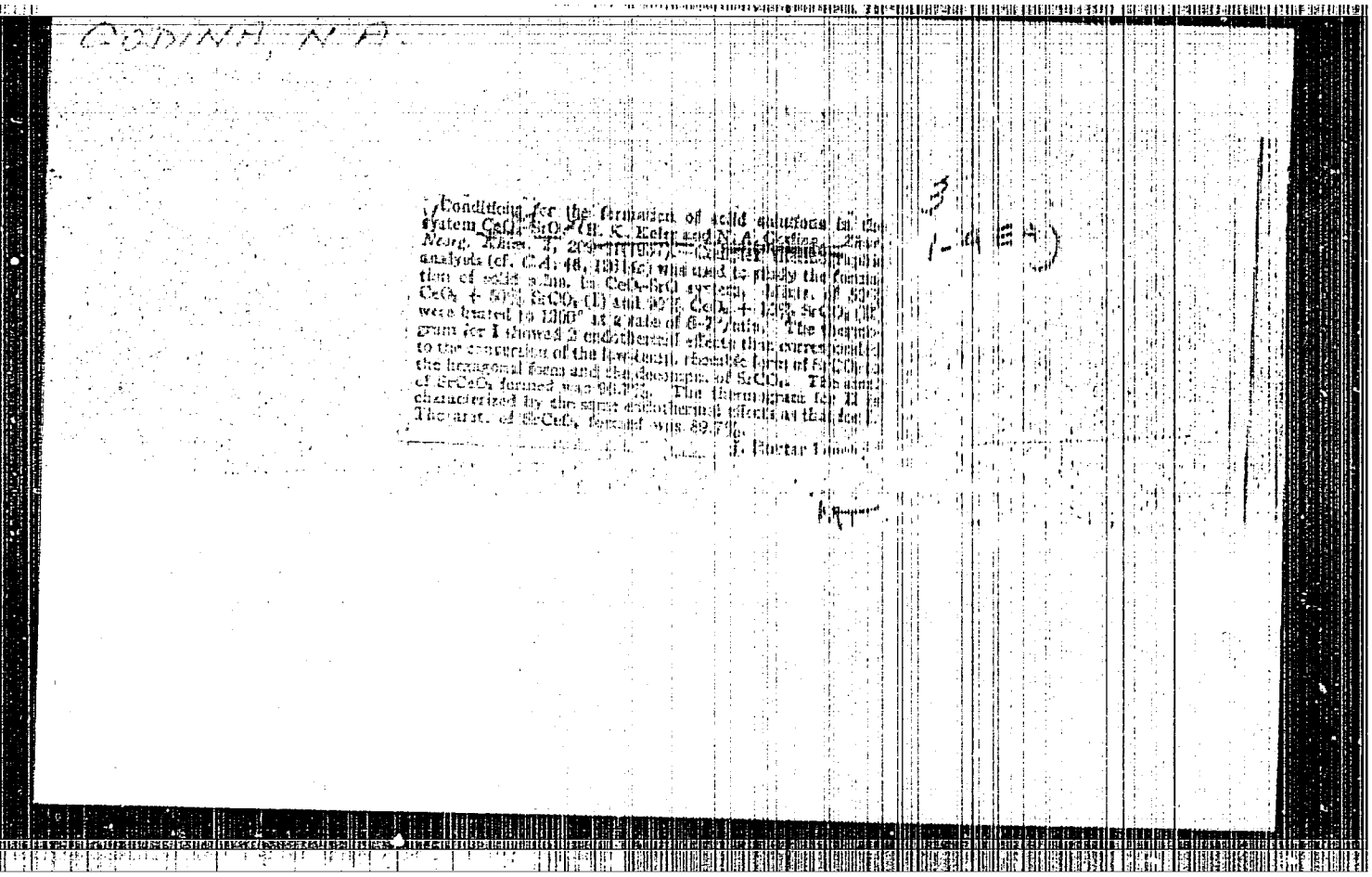
Institution : Acad. of Sc., USSR, Inst. of Chem. of Silicates

Presented by : Academician S. I. Vol'fkovich, February 19, 1955

GODINA, N. A.

Interactions of cerium dioxide with oxides of the alkaline-earth metals. E. K. Keler, N. A. Godina, and A. M. Kalinina. *Zhur. Neorgan. Khim.*, 1 [11] 2555-60 (1956).—Cerates of the alkaline-earth metals are excellent dielectrics and are of interest in the electroceramic industry. The chemical phase method and X rays were used in the investigation; the former is based on solution of the material in acid, i.e., the cerates are dissolved in 25% nitric acid but the cerium dioxide is not. In the interaction of cerium dioxide with calcium oxide, a solid solution was observed over a range with limited solubility of CaO in CeO_2. No cerate of calcium, CeO_2-CaO, was found. In the system CeO_2-SrO, limited solubility of SrO in CeO_2 was also observed. In this case, a chemical compound ($SrCeO_3$) existed. No solid solution was found in the CeO_2-BaO system; a reaction giving barium cerate ($BaCeO_3$), however, was observed. 1 figure, 4 references.

D.T.W.



GODINA, N. A.

Effect of mineralizers on the process of sintering alkaline earth zirconates. K. K. Kulet, N. A. Godina, A. K. Kuznetsov, and A. B. Andreeva. *Zhur. Priklad. Khim.* 30, 682-9(1957).—The effect of B_2O_3, CaF_2, MnO_2, and $FeCl_3$ on the sintering of equimol. mixts. of ZrO_2 with MCO_3 (M = Ca, Ba, and Sr) was detd. by the change in porosity and by chem. and complex thermal analyses (C.A. 12614c). The effect of 1% B_2O_3 (added as H_3BO_3) was pronounced between 1100 and 1200°; porosity decreased and the shrinkage of the compressed (1000 kg./sq. cm.) cylinders increased. At 1000° cylinders with and without B_2O_3 increased in vol. (attributed to the formation of $MZrO_3$), but in the 1100-1200° range cylinders without B_2O_3 were friable, whereas those with 1% B_2O_3 even at 1100° had a strength of approx. 600 kg./sq. cm. The porosity of cylinders heated at 1200° was much smaller. As the temp. increased to 1400° the difference between those contg. B_2O_3 and those without it decreased. The effect of CaF_2 and MnO_2 was slight. That of $FeCl_3$ (2% Fe_2O_3) was more significant but not as great as that of B_2O_3. Cylinders made of mixts. contg. 48 ZrO_2, 50 $CaCO_3$ + 2TiO_2 and 1% B_2O_3 were practically completely sintered at 1350-1400°. B_2O_3 in specimens sintered at 1400° did not vaporize and the fact that it dissolved completely in HCl suggested the formation of Ca borates. The max. increase in the length of the cylinders occurred at 1200-1250° assocd. with the formation of $CaZrO_3$ (60.8%). Mixts. of ZrO_2 with $SrCO_3$ without mineralizers sintered poorly even at 1500° but with 2% Fe_2O_3 (added as $FeCl_3$) were completely sintered at 1400°. The mineralizers did not affect the temp. of $MZrO_3$ formation or reduce the amt. formed.

I. Bencowitz

5(2)

AUTHORS: Godina, N. A., Keler, E. K.

SOV/78-4-4-29/44

TITLE: The Interaction of Hafnium Dioxide With the Oxides of Alkaline-earth Metals (Vzaimodeystviye dvuokisi gafniya s okislami shchelochnozemel'nykh metallov)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 884-891 (USSR)

ABSTRACT: The reaction of hafnium dioxide with the oxides of alkaline-earth metals was investigated by chemical and radiographic analysis. It was stated that in a boiling HCl solution (1:1) annealed HfO_2 and its solid solutions with CaO and MgO are insoluble, while the compounds $CaHfO_3$, $SrHfO_3$ and $BaHfO_3$ are readily soluble. An intense interaction of HfO_2 with the oxides CaO, SrO, and BaO occurs at 1100° with the formation of compounds of the general formula $M^{II}HfO_3$. The compound $CaHfO_3$ and solid solutions are formed in the system HfO_2-CaO at 1350-1400°. A mixture of HfO_2 and $CaCO_3$ yields 95% $CaHfO_3$ after

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it has been heated to 1100° for eight hours. The course of the process as a function of time at 1000 and 1100° is given in figure 1. The phase composition of annealed mixtures of HfO_2 and CaO is contained in table 1. The investigation of the kinetics of $CaHfO_3$ formation and the subsequent transition into a solid solution by the interaction with HfO_2 was made by means of a mixture of 80% HfO_2 + 20% CaO at 1100 and 1600°. The results are given in figure 4. The interaction of HfO_2 with MgO begins at temperatures > 1400° with the formation of solid solutions. It was found by chemical and radiographic analysis that no compound is formed at 1400° between HfO_2 and MgO. During the interaction of HfO_2 with SrO and BaO the compounds $SrHfO_3$ and $BaHfO_3$ are formed within the temperature range 1100-1300°. After heating at 1100° for one hour 95% BaHfO are formed. 96% $SrHfO_3$ are obtained by heating at 1300° for one hour. The authors determined the lattice parameters of these compounds as well as the specific weights, which are given in table 2. No solid solutions are formed in the systems HfO_2-SrO and HfO_2-BaO since there are great differences between the

The Interaction of Hafnium Dioxide With the Oxides of Alkaline-earth Metals

ionic radii. The phase composition of annealed mixtures of HfO_2 and MgO (1300°-1600°) is listed in a table. There are 7 figures, 3 tables, and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences USSR)

SUBMITTED: January 3, 1958

Card 3/3

Godina, N. A.

82484

S/131/60/000/008/003/003
B021/B058

15.2210

AUTHORS: Zuyeva, L. S., Godina, N. A., Keler, E. K.

TITLE: The Properties of Cerium Dioxide and Its Solid Solutions With Calcium- and Strontium Oxide

PERIODICAL: Ogneupory, 1960, No. 8, pp. 368-371

TEXT: The physical and technological properties of the above-mentioned compounds have not been investigated so far. The results of the authors' studies in this field are shown in the paper under review. The conditions of the synthesis of the solid solutions CeO_2 with CaO and SrO have been investigated earlier. Chemically pure cerium carbonate and -nitrate as well as calcium- and strontium carbonate were used as basic materials. CeO_2 was produced first from the cerium salts by annealing. The product obtained contained 98% CeO_2 and about 2% oxides of other rare-earth elements. Three mixtures of various granulation were prepared from this material: a coarse, medium and fine one, the granular composition of which is mentioned in Table 1. The chemical and granular composition of the masses investigated is shown in Table 2. Samples of the masses investigated were fired in a Kryptol furnace at temperatures of from 1450° to 1600°C in order to select

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